UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/684,023	10/06/2000	Joseph B. Rowlands	5580-00300	2300

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EXAMINER
HUYNH, KIM T

ART UNIT	PAPER NUMBER
2112	

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/684,023	ROWLANDS ET AL.
	Examiner	Art Unit
	Kim T. Huynh	2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18,20-29,32-45 and 47* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18,20-29,32-45 and 47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 October 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Receipt Acknowledgement

1.   Receipt is acknowledged of the request filed on 6/01/04 for a request for

continued examination (RCE) under 37 CFR 1.114 based on the application No.

09/684023, which the request is acceptable and an RCE has been established.

Currently, claims 1-18, 20-29, 32-45 and 47 are pending in this application.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-18, 20-29, 32-45, 47 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Yang (US Patent 6,467,002) in view of Smith (US Patent 6,571,306)

As per claims 1,9,24, Yang discloses a first agent configured for coupling to a

bus in which said first agent is one of a plurality of agents that are capable of

being coupled to said bus, said plurality of agents having corresponding arbiters

coupled to receive request signals and operate as distributed arbiters among the

plurality of agents, said request signals corresponding to whether or not the

arbiter of a respective agent is arbitrating for said bus and (col.4, lines 26-63),

(col.5, lines 1-37)

Yang discloses all the limitations as above except wherein an arbiter of said first agent is to maintain order of its priority in relation to other agents arbitrating for said bus and to determine if said first agent wins an arbitration for said bus responsive to said request signals without determining which other agent wins arbitration, if said first agent does not win arbitration. However, Smith discloses distributed arbitration, each bus master sees all bus requests and determines whether or not it has priority to take control of the bus. A particular bus master having a default bus grant, it need not request access to the bus. The parked bus master initiate transactions without first arbitrating for bus access by issuing a bus request. (col.1, lines 48-67), (col.3, line 64-col.5, line 30)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Smith's teaching into Yang system so as to improve a better performance for the system. (col.2, lines 9-17)

As per claim 17, Yang discloses a method comprising:

- Maintaining in a distributed arbiter for a first agent, a state indicative of: (i) which of a plurality of agents coupled to a bus are higher priority than said first agent for an arbitration, and (col.5, lines 15-37) (ii) which of said plurality of agents are lower priority than said first agent for said arbitration; (col.7, lines 31-44)

- Arbitrating for the bus by sending a request signal;(col.6, lines 19-65)

- Receiving request signals of other agents arbitrating for the bus; and (col.5, lines 1-37)

Yang discloses all the limitations as above except determining the state of the

first agent in relation to priorities of other agents arbitrating for the bus to

determine if the first agent wins said arbitration, but without determining which

other agent wins arbitration, if said first agent does not win arbitration. However,

Smith discloses distributed arbitration, each bus master sees all bus requests

and determines whether or not it has priority to take control of the bus. A

particular bus master having a default bus grant, it need not request access to

the bus. The parked bus master initiate transactions without first arbitrating for

bus access by issuing a bus request. (col.1, lines 48-67), (col.3, line 64-col.5, line

30)

It would have been obvious to one having ordinary skills in the art at the

time the invention was made to incorporate Smith's teaching into Yang system so

as to improve a better performance for the system. (col.2, lines 9-17)

As per claims 2, 10, Yang discloses wherein said arbiter of said first agent

comprises one or more registers configured to store a state indicative of:

- which of said plurality of agents are higher priority than said first agent are

  higher priority than said first agent for said arbitration; (col.5, lines 15-37)

- which of said plurality of agents are lower priority than said first agent for

  said arbitration. (col.7,lines 31-44)

As per claims 3, 11 Yang discloses arbiter of said first agent further includes a

circuit configured to generate a grant signal to said first agent responsive to said

plurality of request signals and said state, said grant signal indicative of whether
or not said first agent wins said arbitration. (col.6, lines 26-65)

As per claims 4, 12, 26, Yang discloses circuit is further responsive to an agent
identifier used to identify a winning agent of said arbitration. (col.6, lines 26-65)

As per claims 5, 13, 23, Yang discloses wherein said arbiter of said first agent
further comprises a circuit configured to update said state responsive to an agent
identifier used to identify a winning agent of said arbitration, wherein said circuit
is configured to update said state to indicate a lower priority for said winning
agent after said winning agent wins said arbitration.(col.5, lines 15-37)

As per claims 6, 14, 25 Yang discloses wherein said circuit is further configured
to update said state to indicate that other agents are higher in priority than said
first agent responsive to said first agent winning said arbitration. (col.7, lines 31-
44)

As per claims 7, 15, 27 Yang discloses wherein said bus is a split transaction
bus, and wherein said arbiter for said first agent is configured to arbitrate for an
address portion of said bus, and wherein an agent identifier is included as a
portion of a transaction.(col.5, lines 15-37)

As per claims 8, 16, 28, 29-30, Yang discloses wherein said bus is split
transaction bus, and wherein said arbiter for said first agent is configured to
arbitrate for a data portion of said bus.(col.5,lines 15-37)

As per claim 18, Yang discloses the method further comprising updating said
state after the arbitration. (col.7, lines 31-44)

As per claim 20, Yang discloses wherein said determining includes being
responsive to agent identifiers included with the request signals. (col.5, lines 15-
37)

As per claim 21, Yang discloses the method further comprising updating said
state for said first agent to indicate that each of said plurality of agents requesting
arbitration is higher priority than said first agent if said plurality of agents
requesting arbitration is higher priority than said first agent if said first agent wins
said arbitration. (col.6, lines 26-65)

As per claim 32, Yang discloses a carrier medium comprising a database which
is operated upon by a program executable on a computer system, the program
operating on the database to perform a portion of a process to fabricate an
integrated circuit including circuitry described by the database, the circuitry
described in the database including a first agent configured for coupling to a bus
in which said first agent is one of plurality of agents that are capable of being
coupled to said bus, said plurality of agents having corresponding arbiters
coupled to receive request signals and operate as distributed arbiters among the
plurality of agents, request signals corresponding to whether or not the arbiter of
a respective agent is arbitrating for said bus, and (col.4, lines 26-63), (col.5, lines
15-37), (col.6, lines 19-65)

Yang discloses all the limitations as above except wherein an arbiter of
said first agent to maintain order of its priority in relation to other agents
arbitration for said bus and to determine if said first agent wins an arbitration for

said bus responsive to said request signals without determining which other

agent wins arbitration, if said first agent does not win arbitration. However, Smith

discloses distributed arbitration, each bus master sees all bus requests and

determines whether or not it has priority to take control of the bus. A particular

bus master having a default bus grant, it need not request access to the bus. The

parked bus master initiate transactions without first arbitrating for bus access by

issuing a bus request. (col.1, lines 48-67), (col.3, line 64-col.5, line 30)

It would have been obvious to one having ordinary skills in the art at the

time the invention was made to incorporate Smith's teaching into Yang system so

as to improve a better performance for the system. (col.2, lines 9-17)

As per claim 33, Yang discloses wherein said arbiter of said first agent comprises

one or more registers configured to store a state indicative of : (i) which of said

plurality of agents are higher priority than said first agent for said arbitrations;

(col.5, lines 15-37) and (ii) which of said plurality of agents are lower priority than

said first agent for said arbitration. (col.7, lines 31-44)

As per claim 34, Yang discloses wherein said arbiter of said first agent further

includes a circuit configured to generate a grant signal to said first agent

responsive to said plurality of request signals and said state, said grant signal

indicative of whether or not said first agent wins said arbitration.(col.6, lines 26-

65)

As per claim 35, Yang discloses wherein said circuit is further responsive to an agent identifier used to identify a winning agent of said arbitration. (col.6, lines 26-65)

As per claim 36, Yang discloses wherein said arbiter of said first agent further comprises a circuit configured to update said state responsive to said agent identifier, wherein said circuit is configured to update said state to indicate a lower priority after winning said arbitration. (col.5, lines 15-37)

As per claim 37, Yang discloses wherein said circuit is further configured to update said state to indicate that other agents are higher in priority than said first agent responsive to said first agent winning said arbitration.(col.7, lines 31-44)

As per claim 38, Yang discloses wherein said bus is a split transaction bus, and wherein said arbiter for said first agent is configured to arbitrate for an address portion of said bus, and wherein an agent identifier is included as a portion of a transaction. (col.5, lines 15-37)

As per claim 39, Yang discloses wherein said bus is a split transaction bus, and wherein said arbiter for said first agent is configured to arbitrate for a data portion of said bus. (col.5, lines 15-37)

As per claims 22, 40, Yang discloses a carrier medium comprising a database which is operated upon by a program executable on a computer system, the program operating on the database to perform a portion of a process to fabricate an integrated circuit including circuitry described by the database, the circuitry described in the database including a distributed arbiter comprising:

- One or more registers of the distributed arbiter of a first agent configured to store a state indicative of: (i) which of a plurality of agents coupled to a bus are higher priority than said first agent for an arbitration, and (ii) which of said plurality of agents are lower priority than said first agent for said arbitration; said first agent and plurality of agents having respective distributed arbiters to determine priority of arbitration requests for said bus and said arbiter for said first agent to compare arbitration request from other agents to said state stored in said one or more registers; and (col.5, lines 15-37), (col.7, lines 31-44)

- A first circuit coupled to receive an agent identifier indicative of a second agent winning arbitration of said bus if said first agent does not win arbitration, said agent identifier transmitted on said bus as part of a transaction from a distributed arbiter of said second agent, wherein said first circuit is configured to update said state responsive to said agent identifier. (col.5, lines 15-37), (col.6, lines 19-65)

Yang discloses all the limitations as above except to determine if said first agent wins said arbitration, but without determining which other agent wins arbitration, if said first agent does not win arbitration. However, Smith discloses distributed arbitration, each bus master sees all bus requests and determines whether or not it has priority to take control of the bus. A particular bus master having a default bus grant, it need not request access to the bus. The parked bus

master initiate transactions without first arbitrating for bus access by issuing a

bus request. (col.1, lines 48-67), (col.3, line 64-col.5, line 30)

It would have been obvious to one having ordinary skills in the art at the

time the invention was made to incorporate Smith's teaching into Yang system so

as to improve a better performance for the system. (col.2, lines 9-17)

As per claim 41, Yang discloses wherein said first circuit in said first agent is

configured to update said state to indicate that said second agent is lower priority

than said first agent if said second agent wins arbitration. (col.5, lines 15-37)

As per claim 42, Yang discloses wherein said arbiter further comprises a second

circuit coupled to said one or more registers and coupled to receive said

arbitration requests wherein said second circuit is configured to determine if said

first agent wins said arbitration responsive to said state and said arbitration

requests. (col.6, lines 19-65)

As per claim 43, Yang discloses wherein said first circuit is configured to update

said state to indicate that other agents are higher priority than said first agent

responsive to said first agent winning said arbitration. (col.5, lines 15-37), (col.7,

lines 31-44)

As per claim 44, Yang discloses wherein said second circuit is configured to

determine if said first agent wins said arbitration using the agent identifiers to

identify agents that generate arbitration requests. (col.5, lines 15-37)

As per claim 45, Yang discloses wherein said bus is a split transaction bus, and wherein said arbiter is configured to arbitrate to place an address on said bus.(col.5, lines 15-37)

As per claim 47, Yang discloses wherein said bus is a split transaction bus, and wherein said arbiter is configured to arbitrate to place data on said bus.(col.5, lines 15-37)

Response to Amendment

4.   Applicant's amendment filed on 6/1/04 have been fully considered but are moot in view of the new ground(s) of rejection.

        a. In response to applicant' argument that Yang does not disclose wherein an arbiter of said first agent is to maintain order of its priority in relation to other agents arbitrating for said bus and to determine if said first agent wins an arbitration for said bus responsive to said request signals without determining which other agent wins arbitration, if said first agent does not win arbitration. However, Smith discloses distributed arbitration, each bus master sees all bus requests and determines whether or not it has priority to take control of the bus. A particular bus master having a default bus grant, it need not request access to the bus. The parked bus master initiate transactions without first arbitrating for bus access by issuing a bus request. (col.1, lines 48-67), (col.3, line 64-col.5, line 30)

        Thus, the prior art teaches the invention as claimed and the amended do not distinguish over the prior art as applied.

Conclusion

5.   *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (703)305-5384 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 8:30AM- 6:30PM.*

       If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815 or via e-mail addressed to [mark.rinehart@uspto.gov]. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications.

       Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5631.

Kim Huynh

August 7, 2004

MARK H. RINEHART
SUPERVISORY PATENT EXAM
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